

We Claim:

1. A process for preparing 1, 3-propanediol comprising hydrogenating a compound selected from the group consisting of 3-hydroxypropionic acid, a  $C_1 - C_{20}$  alkyl or a  $C_1 - C_{20}$  aryl ester of 3-hydroxypropionic acid and a mixture of the acid and the ester, in a liquid phase, in the presence of a catalyst comprising ruthenium.
2. The process according to Claim 1 wherein the compound is 3-hydroxypropionic acid.
3. The process according to Claim 1 wherein the compound is a  $C_1 - C_5$  ester of 3-hydroxypropionate acid.
4. The process according to Claim 1 wherein the liquid phase is selected from the group consisting of water, organic solvent that is not hydrogenatable, and a mixture of water and the organic solvent.
5. The process according to Claim 1 wherein the catalyst comprising ruthenium is selected from the group consisting of ruthenium metal and compounds of ruthenium metal.
6. The process according to Claim 1 wherein the ruthenium catalyst comprises a supported ruthenium catalyst.
7. The process according to Claim 6 wherein the supported ruthenium catalyst comprises ruthenium on a carbon support.

8. The process according to Claim 1 wherein the temperature ranges from about 20°C to about 250°C.
9. The process according to Claim 1 wherein the pressure ranges from about 20 p.s.i. to about 4000 p.s.i.
10. A process for preparing 1, 3-propanediol comprising hydrogenating a compound selected from the group consisting of 3-hydroxypropionic acid, a C<sub>1</sub> – C<sub>20</sub> alkyl or a C<sub>1</sub>-C<sub>20</sub> aryl ester of 3-hydroxypropionic acid, in a liquid phase, in the presence of a catalyst comprising, in combination, a ruthenium catalyst and at least one or more additional metal catalyst(s) wherein the additional metal is selected from the group consisting of molybdenum, tungsten, titanium, zirconium, niobium, vanadium, chromium, and mixtures thereof.
11. The process according to Claim 10 wherein the compound is 3-hydroxypropionic acid.
12. The process according to Claim 10 wherein the compound is a C<sub>1</sub> – C<sub>5</sub> ester of 3-hydroxypropionic acid.
13. The process according to Claim 10 wherein the liquid phase is selected from the group consisting of water, organic solvent that is not hydrogenatable, and a mixture of water and the organic solvent.
14. The process according to Claim 10 wherein the ruthenium catalyst is selected from the group consisting of ruthenium metal and compounds of ruthenium metal.

15. The process according to Claim 10 wherein the ruthenium catalyst comprises a supported ruthenium catalyst.
16. The process according to Claim 15 wherein the supported ruthenium catalyst comprises ruthenium on a carbon support.
17. The process according to Claim 10 wherein the additional metal catalyst comprises a metal or a compound of the metal, wherein the metal is selected from the group consisting of molybdenum, tungsten, titanium, zirconium, niobium, vanadium, chromium, and mixtures thereof.
18. The process according to Claim 17 wherein the metal is molybdenum.
19. The process according to Claim 10 wherein the additional metal catalyst comprises a supported metal catalyst.
20. The process according to Claim 10 wherein the temperature ranges from about 20°C to about 250°C.
21. The process according to Claim 10 wherein the pressure ranges from about 20 p.s.i. to about 4000 p.s.i.
22. The process according to Claim 10 wherein the catalyst comprises ruthenium on a carbon support and an additional metal catalyst selected from the group consisting of molybdenum and a molybdenum oxide.
23. The process according to Claim 22 wherein the compound is 3-hydroxypropionic acid.
24. The process according to claims 1 or 10, wherein the 3-hydroxypropionic acid is produced from a genetically engineered organism.